

ABSTRACT OF THE DISCLOSURE

The present invention concerns apparatus and methods for a family of electronic devices based on the concept of a Personalized Authenticated Controller (PAC). The PAC is able to recognize characteristics of an authorized person and allows only that person to rapidly communicate authenticated identification and requests to access, control and transact with many "smart" Instrumentalities designed with compatible communication capabilities. The PAC is conveniently combined with an electronic wristwatch and worn by its user. Personal Smart Instrumentalities, such as vehicles and firearms, will operate without difficulty for their owners but become worthless if stolen. Commercial Smart Instrumentalities, such as merchants and banks, can quickly communicate with the customer's PAC to establish positive personal identification and optionally charge purchases or transfer funds. Various security features are incorporated to ensure authentication of the customer and integrity of the transaction. One security feature is that an user-worn PAC immediately senses removal from an authorized person's body, which cancels authentication and also renders the PAC itself useless if stolen. Another security feature, useful for critical handheld instrumentalities such as firearms, uses the body of the user as a medium to conduct communication signals to the Smart Instrumentality, making these communications reliable and virtually unjammable.